

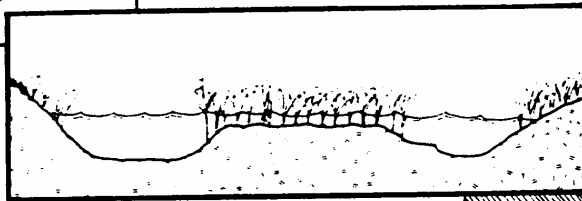
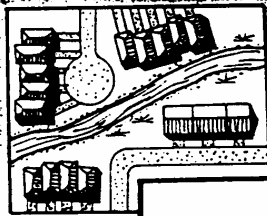
APPENDIX G

Example Wetland Plantings

Design of

Stormwater

Management



Anacostia Restoration Team
Department of Environmental Programs
Metropolitan Washington Council of Governments

Table 13

Native Plant Guide for Stormwater Management Areas in the Mid-Atlantic, USA

Plant Name	Zone	Form	Available	Inundation Tolerance	Wildlife Value	Notes
Trees and Shrubs						
American Beech (<i>Fagus grandifolia</i>)	5,6	Dec. Tree	no	no	High. Mammals and birds.	Prefers shade and rich, well drained soils.
American Holly (<i>Ilex opaca</i>)	5,6	Dec. Tree	yes	limited	High. Songbirds-food cover, nesting	Coastal Plain only. Prefers shade and rich soils.
American Hornbeam (<i>Carpinus caroliniana</i>)	4,5	Dec. Tree	yes	some	Moderate. Food, browsing.	Most common in floodplains and bottomland of Piedmont and mountains.
Arrowwood Viburnum (<i>Viburnum dentatum</i>)	3,4	Dec. Shrub	yes	yes	High. Songbirds and mammals	Grows best in sun to partial shade.
Bald Cypress (<i>Taxodium distichum</i>)	3,4	Dec. Tree	yes	yes	Little food value but good perching site for waterfowl.	Forested Coastal Plain wetlands. North of normal range. Tolerates drought.
Bayberry (<i>Myrica pensylvanica</i>)	4,5,6	Dec. Shrub	yes	yes	High. Nesting, food, cover. Berries last into winter.	Coastal Plain only. Roots fix N. Tolerates slightly acidic soil.
Bitternut Hickory (<i>Carya cordiformis</i>)	4,5,6	Dec. Tree	no	no	High. Food.	Moist soils or wet bottomland areas.
Black Cherry (<i>Prunus serotina</i>)	5,6	Dec. Tree	yes	no	High. Fruit is eaten by many birds.	Temporarily flooded forested areas. Possible fungus infestation.
Black Walnut (<i>Juglans nigra</i>)	5,6	Dec. Tree	yes	some	High. Food.	Temporarily flooded wetlands along floodplains. Well drained, rich soils.
Blackgum or Sourgum (<i>Nyssa sylvatica</i>)	4,5,6	Dec. Tree	yes	yes	High. Songbirds, egrets, herons, raccoons, owls.	Can be difficult to transplant. Prefers sun to partial shade.
Black Willow (<i>Salix nigra</i>)	3,4,5	Dec. Tree	yes	yes	High. Browsing and cavity nesters.	Rapid growth, stabilizes streambanks. Full sun.
Buttonbush (<i>Cephalanthus occidentalis</i>)	2,3,4,5	Dec. Shrub	yes	yes	High. Ducks and shorebirds. Seeds nectar and nesting.	Full sun to partial shade. Will grow in dry areas.

Chapter 5: Design Elements for Stormwater Wetlands

Table 13 (Cont'd.)

Plant Name	Zone	Form	Available	Inundation Tolerance	Wildlife Value	Notes
Chestnut Oak (<i>Quercus prinus</i>)	5,6	Dec. Tree	no	no	High. Cover, browse and food.	Gypsy Moth Target. Dry soils.
Common Choke Cherry (<i>Prunus virginiana</i>)	5,6	Dec. Tree	no	no	High. Birds, mammals. Fruit and cover.	Prefers drier conditions.
Common Spicebush (<i>Lindera benzoin</i>)	3,4,5	Dec. Shrub	yes	yes	Very high. Songbirds.	Shade and rich soils. Tolerates acidic soils. Good understory species.
Eastern Cottonwood (<i>Populus deltoides</i>)	4,5	Dec. Tree	yes	yes	Moderate. Cover, food.	Shallow rooted, subject to windthrow. Invasive roots. Rapid growth.
Eastern Hemlock (<i>Tsuga canadensis</i>)	5,6	Conif. Tree	yes	yes	Moderate. Mostly cover and some food.	Tolerates all sun/shade conditions. Tolerates acid soil.
Eastern Red Cedar (<i>Juniperus virginiana</i>)	4,5,6	Conif. Tree	yes	no	High. Fruit for birds. Some cover.	Full sun to partial shade. Common in wetlands, shrub bogs and edge of streams.
Elderberry (<i>Sambucus canadensis</i>)	3,4,5,6	Dec. Shrub	yes	yes	Extremely high for food and cover, for birds and mammals.	Full sun to partial shade.
Flowering Dogwood (<i>Cornus florida</i>)	6	Dec. Tree	yes	no	High. Birds, food.	Prefers rich, moist soils. Dogwood anthracnose possible problem.
Fringe Tree (<i>Chionanthus virginicus</i>)	3,4,5	Dec. Shrub or small tree	yes	some	Moderate. Food and cover.	Full sun to partial shade. Tolerates acid soil.
Green Ash, Red Ash (<i>Fraxinus pennsylvanica</i>)	4,5	Dec. Tree	yes	yes	Moderate. Songbirds.	Rapid growing, streambank stabilizer. Full sun to partial shade.
Hackberry (<i>Celtis occidentalis</i>)	5,6	Dec. Tree	yes	some	High. Food and cover.	Full sun to partial shade.
Ironwood/ Hophornbeam (<i>Ostrya virginiana</i>)	5,6	Dec. Tree	yes	some	Moderate. Food and browse.	Tolerant of all sunlight conditions.

Chapter 5: Design Elements for Stormwater Wetlands

Table 13 (Cont'd.)

Plant Name	Zone	Form	Available	Inundation Tolerance	Wildlife Value	Notes
Larch, Tamarack (<i>Larix laricina</i>)	3,4	Conif. Tree	no	yes	Low. Nest tree and seeds.	Rapid initial growth. Full sun, acidic boggy soils.
Loblolly Pine (<i>Pinus laeda</i>)	5,6	Conif. Tree	yes	some	Moderate. Food, nesting, squirrels.	Coastal Plain only. Tolerant of extreme soil conditions.
Mountain Laurel (<i>Kalmia latifolia</i>)	6	Evergreen	no	no	Low. Cover and nectar. Foliage is toxic to cattle and deer.	Partial shade, acidic soils.
Persimmon (<i>Diospyros virginiana</i>)	4,5,6	Dec. Tree	yes	some	Extremely high. Birds, mammals	Not shade tolerant. Well drained soils.
Pin Oak (<i>Quercus palustris</i>)	3,4,5,6	Dec. Tree	yes	yes	High. Mast. Tolerates acidic soil.	Gypsy Moth Target. Prefers sun to partial shade.
Red Chokeberry (<i>Pyrus arbutifolia</i>)	3,4,5	Dec. Shrub	no	yes	Moderate. Songbirds.	Bank stabilizer. Partial sun.
Red Maple (<i>Acer rubrum</i>)	3,4,5,6	Dec. Tree	yes	yes	High seeds and browse. Tolerates acidic soil.	Rapid Growth.
Red Oak (<i>Quercus rubra</i>)	5,6	Dec. Tree	yes	no	High. Food and cover	Gypsy Moth Target. Prefers well drained, sandy soils.
River Birch (<i>Betula nigra</i>)	3,4,5	Dec. Tree	yes	yes	Low, but good for cavity nesters.	Bank erosion control. Full sun.
Scarlet Oak (<i>Quercus coccinea</i>)	5,6	Dec. Tree	yes	no	High. Food and cover.	Gypsy Moth Target. Difficult to transplant.
Shadbush, Serviceberry (<i>Amelanchier canadensis</i>)	4,5,6	Dec. Shrub	yes	yes	High. Nesting, cover and food. Birds and mammals.	Prefers partial shade. Common in forested wetlands and upland woods.
Silky Dogwood (<i>Cornus amomum</i>)	3,4,5	Dec. Shrub	yes	yes	High. Songbirds, mammals.	Shade and drought tolerant. Good bank stabilizer.

Chapter 5: Design Elements for Stormwater Wetlands

Table 13 (Cont'd.)

Plant Name	Zone	Form	Available	Inundation Tolerance	Wildlife Value	Notes
Smooth Alder (<i>Alnus serrulata</i>)	3,4,5	Dec. Tree	no	yes	High. Food, cover.	Rapid Growth. Stabilizes streambanks.
Sourwood (<i>Oxydendrum arboreum</i>)	5,6	Dec. Tree	yes	no	Moderate. Food.	Ornamental.
Swamp Oak (<i>Quercus bicolor</i>)	3,4,5	Dec. Tree	yes	yes	High. Mast.	Full sun to partial shade. Good bottomland tree.
Sweetgum (<i>Liquidambar styraciflua</i>)	4,5,6	Dec. Tree	yes	yes	Moderate. Songbirds.	Tolerates acid or clay soils. Sun to partial shade.
Sycamore (<i>Platanus occidentalis</i>)	4,5,6	Dec. Tree	yes	yes	Low. Food, cavities for nesting.	Rapid Growth. Common in floodplains and alluvial woodlands.
Tulip Tree (<i>Liriodendron tulipifera</i>)	5,6	Dec. Tree	yes	no	Moderate. Seeds and nest sites.	Full sun to partial shade. Well drained soils. Rapid growth.
Tupelo (<i>Nyssa sylvatica vari biflora</i>)	3,4,5	Dec. Tree	yes	yes	High. Seeds, cavity nesters.	Ornamental.
White Ash (<i>Fraxinus americana</i>)	5,6	Dec. Tree	yes	no	High. Food.	All sunlight conditions. Well drained soils.
White Oak (<i>Quercus alba</i>)	5,6	Dec. Tree	yes	some	High. Food and cover.	Gypsy Moth Target. Prefers well drained soils.
Willow Oak (<i>Quercus phellos</i>)	4,5,6	Dec. Tree	yes	yes	High. Mast.	Full sun to partial shade. Common in temporarily flooded forested wetlands.
Winterberry (<i>Ilex verticillata</i>)	3,4,5	Dec. Shrub	yes	yes	High. Cover and fruit for birds. Holds berries into winter.	Full sun to partial shade. Seasonally flooded areas.
Witch Hazel (<i>Hamamelis virginiana</i>)	4,5	Dec. Shrub	yes	no	Low. Food for squirrels, deer and ruffed grouse.	Prefers shade. Ornamental

Chapter 5: Design Elements for Stormwater Wetlands

Table 13 (Cont'd.)

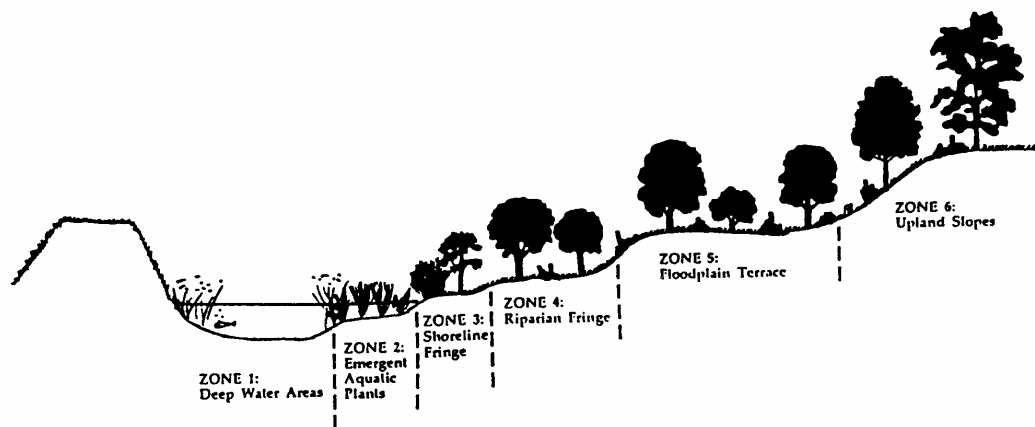
Plant Name	Zone	Form	Available	Inundation Tolerance	Wildlife Value	Notes
Wetland Plants						
Arrow arum (<i>Peltandra virginica</i>)	2,3	Emergent	yes	up to 1 ft.	High. Berries are eaten by wood ducks.	Full sun to partial shade.
Arrowhead/Duck potato (<i>Sagittaria latifolia</i>)	2,3	Emergent	yes	up to 1 ft.	Moderate. Tubers and seeds eaten by ducks.	Aggressive colonizer.
Broomsedge (<i>Andropogon virginicus</i>)	2,3	Perimeter.	yes	up to 3 in.	High. Songbirds and browsers. Winter food and cover.	Tolerant of fluctuating water levels & partial shade.
Bushy Beardgrass (<i>Andropogon glomeratus</i>)	2,3	Emergent	yes	up to 1 ft.		Requires full sun.
Cattail (<i>Typha spp.</i>)	2,3	Emergent	yes	up to 1 ft.	Low. Except as cover.	Aggressive. May eliminate other species. Volunteer. High pollutant treatment.
Coontail (<i>Ceratophyllum demersum</i>)	1	Submergent	no	yes	Low food value. Good habitat and shelter for fish and invertebrates.	Free floating SAV. Shade tolerant. Rapid growth.
Common Three-Square (<i>Scirpus pungens</i>)	2	Emergent	yes	up to 6 in.	High. Seeds, cover. Waterfowl, songbirds.	Fast colonizer. Can tolerate periods of dryness. Full sun. High metal removal.
Duckweed (<i>Lemna sp.</i>)	1,2	Submergent/emergent	yes	yes	High. Food for waterfowl and fish.	High metal removal.
Lizard's Tail (<i>Saururus cernuus</i>)	2	Emergent	yes	up to 1 ft.	Low, except wood ducks.	Rapid growth. Shade tolerant.
Marsh Hibiscus (<i>Hibiscus moscheutos</i>)	2,3	Emergent	yes	up to 3 in.	Low. Nectar.	Full sun. Can tolerate periodic dryness.
Pickerelweed (<i>Pontederia cordata</i>)	2,3	Emergent	yes	up to 1 ft.	Moderate. Ducks. Nectar for butterflies.	Full sun to partial shade.
Pond Weed (<i>Potamogeton pectinatus</i>)	1	Submergent	yes	yes	Extremely high. Waterfowl, marsh and shorebirds.	Removes heavy metals.

Table 13 (Cont'd.)

Plant Name	Zone	Form	Available	Inundation Tolerance	Wildlife Value	Notes
Rice Cutgrass (<i>Leersia oryzoides</i>)	2,3	Emergent	yes	up to 3 in.	High. Food and cover.	Full sun although tolerant of shade. Shoreline stabilization.
Sedges (<i>Carex spp.</i>)	2,3,4	Emergent	yes	up to 3 in.	High. Waterfowl, songbirds.	Many wetland and several upland species.
Soft-stem Bulrush (<i>Scirpus validus</i>)	2,3	Emergent	yes	up to 1 ft.	Moderate. Good cover and food.	Full sun. Aggressive colonizer. High pollutant removal.
Smartweed (<i>Polygonum spp.</i>)	2,3,4	Emergent	yes	up to 1 ft.	High. Waterfowl, songbirds. Seeds and cover.	Fast colonizer. Avoid weedy aliens such as <i>P. perfoliatum</i> .
Soft Rush (<i>Juncus effusus</i>)	2,3,4	Emergent	yes	up to 3 in.	Moderate.	Tolerates wet or dry conditions.
Spatterdock (<i>Nuphar luteum</i>)	2	Emergent	yes	up to 3 ft	Moderate for food but high for cover.	Fast colonizer. Tolerant of fluctuating water levels.
Switchgrass (<i>Panicum virgatum</i>)	2,3,4,5,6	Perimeter	yes	up to 3 in..	High. Seeds, cover for waterfowl, songbirds.	Tolerates wet/dry conditions.
Sweet Flag (<i>Acorus calamus</i>)	2,3	Perimeter	yes	up to 3 in.	Low.	Tolerant of dry periods. Not a rapid colonizer. Tolerates acidic conditions.
Waterweed (<i>Elodea canadensis</i>)	1	Submergent	yes	yes	Low.	Good water oxygenator. High nutrient, copper, manganese and chromium removal.
Wild Celery (<i>Valisneria spiralis</i>)	1	Submergent	yes	yes	High. Food for waterfowl. Habitat for fish and invertebrates.	Tolerant of murky water and high nutrient loads.
Wild Rice (<i>Zizania aquatica</i>)	2	Emergent	yes	up to 1 ft.	High. Food for birds.	Prefers full sun.

Figure 15

Pondscaping Zones in a Stormwater Wetland
(Cross-sectional view)



The pondscaping zones as they appear in cross-section. Note that the width of the pondscaping zones is related to the side-slope angle, i.e., the steeper the slope; the narrower the width of the pondscaping zones.

